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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,798	07/02/2003	Gesine Arends	2493 A	5336

7590 06/19/2008

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EXAMINER	
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ART UNIT	PAPER NUMBER
1797	

MAIL DATE	DELIVERY MODE
06/19/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/612,798	ARENDS ET AL.	
	Examiner	Art Unit	
	JENNIFER A. LEUNG	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 July 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on March 17, 2008 has been carefully considered. Claim 12 is newly added. Claims 1-12 are under consideration.

Drawings and Specification

2. The approved marked-up copy of the drawings filed on July 13, 2006 should be replaced by a formal drawing sheet in compliance with 37 CFR 1.121(d). The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

3. The specification is objected to because the added figure (FIG. 2) should be appropriately described under the "Brief Description of the Drawings" beginning on page 9 and the "Detailed Description of the Preferred Embodiments" beginning on page 10. No amendment shall introduce new matter into the disclosure. Appropriate correction is required.

Claim Objections

4. Claim 5 is objected to because of the following informalities: Reference numerals (12) and (11) should be deleted because they reference the inlet opening and the outlet opening, respectively, of the second heating element, now deleted from lines 2-3 of the limitation. Also, reference numerals (6,8) in line 3 should be changed to --(8)-- in order to properly reference the first heating element, set forth in claim 1 and Figure 1. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to the relationship between "the flap" recited in lines 3 and 5, and "a flap" set forth in claim 1, line 19. In particular, it is unclear as to whether Applicant is attempting to recite an alternate placement for the flap previously set forth in claim 1, or the provision of additional flaps at other locations within the apparatus.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. (JP 02-120205) in view of Yoshioka et al. (JP 63-049249) and Tanizaki et al. (JP 06-227801).

Regarding claims 1 and 12, Mizuno et al. (see FIGs. 5(A) and 5(B); English Abstract) discloses an apparatus comprising:

a heating apparatus (i.e., burner 2) for production of a heating stream wherein the heating stream is separated into two flue gas partial flows (i.e., one flow into the heating bed 5a, another flow into the heating bed 5b); and

a first converter (i.e., catalyst tank 3a, containing a reforming catalyst 4a) and a second converter (i.e., catalyst tank 3b, containing a reforming catalyst 4b) arranged behind the first converter in the flow direction of a hydrogen enriched fluid flow, wherein each of the converters (3a, 3b) is configured for reforming hydrocarbons to hydrogen, wherein the flow of matter

containing hydrocarbons (i.e., supplied via inlet 6) is converted in the first converter (3a) first and the second converter (3b) further to a hydrogen enriched fluid flow (i.e., exiting via outlet 10), the flow of matter in the first converter (3a) being in a counterflow direction relative to the flow of matter in the second converter (3b) (i.e., as shown in FIG. 5(A), the flow is upward in the first converter 3a and downward in the second converter 4b).

According to a FIRST interpretation of the prior art, Mizuno et al. discloses a first heating element (i.e., heating bed 5b) flowed-through by the heating stream for heating at least one of the first and second converters (3a, 3b), wherein, in at least one operating phase, the heating stream in the heating bed (5b) flows completely in a counterflow direction to the flow of matter in the second converter (3b), (see FIG. 5(A)); a second heating element (i.e., heating bed 5a with heating bed 5c) that is flowed through by the heating stream for heating at least one of the first and second converters (3a,3b); and an outlet opening (12) provided on the second heating element.

According to a SECOND interpretation of the prior art, Mizuno et al. discloses a first heating element (i.e., heating bed 5a with heating bed 5c) flowed-through by the heating stream for heating at least one of the first and second converters (3a,3b), wherein, in at least one operating phase, the heating stream in heating bed (5a) flows completely in a counterflow direction to the flow of matter in the second converter (3b); a second heating element (i.e., heating bed 5b) that is flowed through by the heating stream for heating at least one of the first and second converters (3a,3b); and an outlet opening (i.e., at 13) provided on the second heating element (5b).

The apparatus of Mizuno et al. is the same as the instantly claimed apparatus, except that

Mizuno et al. is silent as to the provision of a flap for closing the outlet opening (12 or 13).

Yoshioka et al. (FIGs. 1, 2; Abstract) teaches an apparatus for converting a flow of matter containing hydrocarbons to a hydrogen-enriched fluid flow, wherein the apparatus comprises a heating apparatus (i.e., burner 7) for production of a heating stream; a converter (10,10a) for reforming hydrocarbons to hydrogen; and heating elements (i.e., heating chambers 8a, 8b) flowed through by the heating stream for heating the converter. In particular, Yoshioka et al. teaches that an outlet opening (15, 27) of the heating element (8a, 8b) is provided with a valve (26, 29) for closing the outlet opening. Tanizaki et al. (FIG. 2; Abstract; Machine Translation) also teaches an apparatus for converting a flow of matter containing hydrocarbons to a hydrogen-enriched fluid flow, wherein a valve in the form of a flap (13) is provided to regulate the quantity of heat supplied by a heating stream (from inlet 11) to the converter (i.e., reforming part 9).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a flap for closing the outlet opening (12, 13) in the apparatus of Mizuno et al., because the flap would have allowed for the temperature of the converters to be regulated, by controlling the amount of heat applied by the heating stream to the converters at a given location within the apparatus, as suggested by Yoshioka et al. and Tanizaki et al.

Regarding claim 2, Mizuno et al., as best understood, discloses that the heating stream for the first and second converters (3a,3b) flows completely in a counterflow direction to the flow of matter (i.e., the heating stream in heating bed 5a or 5b is counterflow to the flow of matter in the second converter 3b; also, the heating stream in heating bed 5c is counterflow to the flow of matter in the first converter 3a; see FIG. 5(A)).

Regarding claim 3, according to the FIRST interpretation of the prior art, the modified

apparatus of Mizuno et al. structurally meets the claims, because the second heating element (5a,5c) is flowed through by the heating stream for heating one of the first and second converters (3a,3b). According to the SECOND interpretation of the prior art, the modified apparatus of Mizuno et al. structurally meets the claims, because the second heating element (5b) is flowed through by the heating stream for heating one of the first and second converters (3a,3b). Please note that the recitation of a desired operating period for the heating element (i.e., during a start phase) adds no further patentable weight to the claim, since a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim.

Regarding claim 4, according to the SECOND interpretation of the prior art, Mizuno et al. discloses that the second heating element (5b) is disposed between the first and second converters (3a,3b). (see FIGs. 5(A) and 5(B)).

Regarding claim 5, as modified above, the outlet opening (12) of the second heating element (5a,5c) is provided with the flap, according to the FIRST interpretation of the prior art. And, as modified above, the outlet opening (13) of the second heating element (5b) is provided with the flap, according to the SECOND interpretation of the prior art. Furthermore, the shifting of the location of the flap, in order to regulate the flow of the heating stream within a particular region of the Mizuno et al. apparatus, would have been considered routine for one having ordinary skill in the art.

Regarding claim 6, Yoshioka et al. (see FIGs. 1, 2; Abstract) further teaches that a control unit (i.e., including elements 32, 33, 34, 35, 36) is provided for controlling the opening and

closing of the valve (26, 29). It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the control unit as taught by Yoshioka et al. in the modified apparatus of Mizuno et al., because the control unit would have allowed for an optimal temperature of the converters to be automatically maintained, by controlling the supply of heat to the converters via automatic opening and closing of the flap/valve.

Regarding claim 7, Mizuno et al. discloses that the converters (3a,3b) and heating elements (5a,5b,5c) are arranged approximately coaxially to one another (see FIG. 5(B)).

Regarding claim 8, Mizuno et al. discloses that the heating apparatus (2) is arranged approximately coaxial to the converters (3a,3b) and heating elements (5a,5b,5c). (see FIG. 5(A)).

Regarding claim 9, the heating apparatus (2) of Mizuno et al. is located below the converters (3a,3b) and heating elements (5a,5b,5c). (see FIGs. 5(A), 5(B)). Mizuno et al. is silent as to whether the heating apparatus (2) may be located approximately centrally to the converters and heating elements. Yoshioka et al., however, teaches a heating apparatus (7) that is located approximately centrally to the converter (10,10a) and the heating elements (8a,8b). (see FIG. 2). It would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to shift the locating of the heating apparatus (2) in the modified apparatus of Mizuno et al. to a location that was approximately central to the converters and the heating elements, because the approximately central location would have predictably provided another satisfactory configuration for providing a heating stream for heating the converters, as evidenced by Yoshioka et al., and furthermore, the shifting location of parts was held to be obvious. *In re Japikse,* 181 F.2d 1019, 1023, 86 USPQ 70, 73 (CCPA 1950).

7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno

et al. (JP 02-120205) in view of Yoshioka et al. (JP 63-049249), Tanizaki et al. (JP 06-227801) and Szydlowski et al. (EP 0 275 549).

The same comments with respect to Mizuno et al., Yoshioka et al. and Tanizaki et al. from claim 1 above apply. Mizuno et al., however, is silent as to the apparatus being used in combination with a fuel cell unit, as a fuel cell assembly in a motor vehicle. However, it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the modified apparatus of Mizuno et al. in combination with a fuel cell unit, as a fuel cell assembly in a motor vehicle, because such application of the hydrogen producing apparatus would have been considered well known to one of ordinary skill in the art, as further supported by Szydlowski et al. (see column 1, lines 10-31). Furthermore, when a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007).

Response to Arguments

8. Applicant's arguments filed March 17, 2008 have been fully considered but they are not persuasive. Applicant (beginning with the second paragraph on page 8) argues,

> "The primary reference to Mizuno discloses a reformer comprising several converters. The flow of matter passes one of these converters and leaves the reformer. Mizuno fails to teach that the flow of matter can pass two converters successively.
>
> In addition, Mizuno does not teach that the flow of matter can flow in different directions.
>
> Likewise, neither of the other references, Yoshioka and Tanizaki, cited in combination with Mizuno to support the rejection of claim 1 under Section 103,

discloses that the flow of matter passes two converters successively AND that the flow of matter can flow in different directions."

The Examiner respectfully disagrees. As shown in the embodiment of FIGs. 5(A) and 5(B), Mizuno et al. discloses a reformer comprising a first converter (i.e., catalyst tank **3a**, containing a reforming catalyst **4a**) and a second converter (i.e., catalyst tank **3b**, containing a reforming catalyst **4b**). The first converter **3a**/**4a** and the second converter **3b**/**4b** are arranged in series such that, during operation, the raw material to be reformed flows into the reformer via the inlet at **6**; through the heated coil to the base of the first converter **3a**/**4a**; upwards through the first converter **3a**/**4a**; over to the top of the second converter **3b**/**4b**; downwards through the second converter **3b**/**4b**; and out through the exit at **10** (see unshaded flow arrows). Thus, the raw material is converted in the first converter **3a**/**4a** first, and in the second converter **3b**/**4b** further, to form the hydrogen-enriched fluid. Also, with respect to the new claim 12, the flow of matter flows in different directions, since the flow of matter through the first converter **3a**/**4a** is upward, and the flow of matter through the second converter **3b**/**4b** is downward.

Allowable Subject Matter

9. The following proposed claim amendments, considered to distinguish patentably over the art of record in this application, are presented to Applicant for consideration:

1. (Currently Amended) An apparatus (1) for converting a flow of matter (4) containing hydrocarbons to a hydrogen-enriched fluid flow (10), comprising:

a heating apparatus (5) for production of a heating stream (6)~~, wherein the heating stream (6) is separated into two flue gas partial flows~~;

a first converter (2) and a second converter (3) arranged behind said first

converter in a flow direction to [[a]]the hydrogen-enriched fluid flow (10), wherein each of the first converter and the second converter is configured for reforming hydrocarbons to hydrogen, and wherein the flow of matter (4) containing hydrocarbons is converted in the first converter first and in the second converter further to [[a]]the hydrogen-enriched fluid flow;

a first heating element (8) provided with an inlet opening and an outlet opening that is flowed-through by the heating stream for heating at least one of the first and second converters (2, 3), wherein the first heating element comprises a first flue gas chamber (8a) for heating the second converter (3) and a second flue gas chamber (8b) downstream from the first flue gas chamber for heating the first converter (2), and wherein ~~in at least one operating phase,~~ the heating stream (6) that flows through the first flue gas chamber (8a) ~~for the second converter (3)~~ flows completely in a counterflow direction to the flow of matter (4) in the second converter (3);

a second heating element (9) provided with an inlet opening (12) and an outlet opening (11) that is flowed-through by the heating stream (6) for heating at least one of the first and second converters, wherein the second heating element is located between the first and second converters; and

~~an outlet opening provided on the second heating element, wherein the second heating element is provided with a flap for closing the outlet opening.~~

flaps for closing each of the inlet opening (12) and the outlet opening (11) of the second heating element, such that the second heating element (9) forms a thermal separation between the first converter (2) and the second converter (3) when the inlet

opening (12) and the outlet opening (11) are closed by the flaps during at least one operating phase.

2. (Currently Amended) The apparatus (1) according to claim 1, wherein ~~at least in one operating phase,~~ the heating stream (6) ~~for the first and second converters (2, 3)~~ that flows through the second flue gas chamber (8b) flows completely in a counterflow direction to the flow of matter (4) in the first converter (2).

3. (Currently Amended) The apparatus (1) according to claim 1, wherein the second heating element (9) ~~that is flowed through by the heating stream (6) is provided for heating one of the first and second converters (2, 3) in a start phase~~ heats at least one of the first converter (2) and the second converter (3) when the flaps at the inlet opening (12) and the outlet opening (11) are opened during a start phase.

4. (Cancelled).

5. (Currently Amended) The apparatus (1) according to claim 3, wherein ~~an inlet opening (12) and/or an outlet opening (11) of the first heating element (6, 8) is provided with the flap for apportioning the heating stream (6), and wherein an inlet opening of the second heating element is provided with the flap for apportioning the heating stream~~ the inlet opening and/or outlet opening of the first heating element (8) is further provided with a flap for closing the inlet opening and/or opening of the first heating element (8).

6. (Currently Amended) The apparatus (1) according to claim 5, wherein at least one control unit is provided for controlling the flaps.

7. (Previously Presented) The apparatus (1) according to claim 3, wherein the first

and second converters (2, 3) and/or the first and second heating elements (8, 9) are arranged approximately coaxially to one another.

8. (Previously Presented) The apparatus (1) according to claim 3, wherein the heating apparatus (5) is arranged approximately coaxially to the converters (2, 3) and/or the heating elements (8, 9).

9. (Previously Presented) The apparatus (1) according to claim 3, wherein the heating apparatus (5) is arranged approximately centrally to the converters (2, 3) and/or the heating elements (8, 9).

10. (Currently Amended) A fuel cell assembly, comprising:

a fuel cell unit and an apparatus (1) for converting a hydrocarbon-containing flow of matter (4) to a hydrogen-enriched fluid flow (10), wherein the apparatus (1) comprises a heating apparatus (5) for production of a heating stream (6)~~, wherein the heating stream (6) is separated into two flue gas partial flows~~; a first converter (2) and a second converter (3) arranged behind said first converter in a flow direction to [[a]]the hydrogen-enriched fluid flow (10), wherein each of the first converter and the second converter is configured for reforming hydrocarbons to hydrogen, wherein the flow of matter containing hydrocarbons (4) is converted in the first converter first and in the second converter further to [[a]]the hydrogen-enriched fluid flow; a first heating element (8) provided with an inlet opening and an outlet opening that is flowed-through by the heating stream for heating at least one of the first and second converters (2,3), wherein the first heating element comprises a first flue gas chamber (8a) for heating the second converter (3) and a second flue gas chamber (8b) downstream from the first flue gas

chamber for heating the first converter (2), and wherein ~~in at least one operating phase,~~ the heating stream (6) ~~for the second converter (3)~~that flows through the first flue gas chamber (8a) flows completely in a counterflow direction to the flow of matter (4) in the second converter (3); a second heating element (9) provided with an inlet opening (12) and an outlet opening (11) that is flowed-through by the heating stream for heating at least one of the first and second converters, wherein the second heating element is located between the first and second converters; and ~~an outlet opening provided on the second heating element, wherein the second heating element is provided with a flap for closing the outlet opening~~ flaps for closing each of the inlet opening (12) and the outlet opening (11) of the second heating element, such that the second heating element (9) forms a thermal separation between the first converter (2) and the second converter (3) when the inlet opening (12) and the outlet opening (11) are closed by the flaps during at least one operating phase.

11. (Currently Amended) A motor vehicle with a fuel cell assembly, wherein the fuel cell assembly comprises:

a fuel cell unit and an apparatus (1) for converting a hydrocarbon-containing flow of matter (4) to a hydrogen-enriched fluid flow (10), wherein the apparatus (1) comprises a heating apparatus (5) for production of a heating stream (6)~~, wherein the heating stream (6) is separated into two flue gas partial flows~~; a first converter (2) and a second converter (3) arranged behind said first converter in a flow direction to [[a]]the hydrogen-enriched fluid flow (10), wherein each of the first converter and the second converter is configured for reforming hydrocarbons to hydrogen, and wherein the flow of matter (4)

containing hydrocarbons is converted in the first converter first and in the second converter further to [[a]]the hydrogen-enriched fluid flow; a first heating element (8) provided with an inlet opening and an outlet opening that is flowed-through by the heating stream for heating at least one of the first and second converters (2, 3), wherein the first heating element comprises a first flue gas chamber (8a) for heating the second converter (3) and a second flue gas chamber (8b) downstream from the first flue gas chamber for heating the first converter (2), and wherein ~~in at least one operating phase,~~ the heating stream (6) ~~for the second converter (3)~~ that flows through the first flue gas chamber (8a) flows completely in a counterflow direction to the flow of matter (4) in the second converter (3); a second heating element (9) provided with an inlet opening (12) and an outlet opening (11) that is flowed-through by the heating stream for heating at least one of the first and second converters, wherein the second heating element is located between the first and second converters; and ~~an outlet opening provided on the second heating element, wherein the second heating element is provided with a flap for closing the outlet opening~~flaps for closing each of the inlet opening (12) and the outlet opening (11) of the second heating element, such that the second heating element (9) forms a thermal separation between the first converter (2) and the second converter (3) when the inlet opening (12) and the outlet opening (11) are closed by the flaps during at least one operating phase.

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or adequately suggest an apparatus for converting a flow of hydrocarbon containing matter to a hydrogen enriched fluid flow, wherein the apparatus

comprises the proposed configuration of a first converter, a second converter, a first heating element, a second heating element, and flaps. The closest prior art to Mizuno et al. discloses many of the claimed elements, as commented above. Mizuno et al., however, fails to disclose or adequately suggest the provision of flaps at each of the inlet opening and the outlet opening of the second heating element such that, during at least one operating phase, the second heating element establishes a thermal separation between the first converter and the second converter. In addition, Mizuno et al. fails to disclose or adequately suggest the claimed heating stream or flow of matter configuration, wherein the heating stream that flows through the first flue gas chamber of the first heating element flows in a completely counterflow direction to the flow of matter in the second converter.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

* * *

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. LEUNG whose telephone number is (571)272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer A. Leung/
Primary Examiner, Art Unit 1797